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REV2009-04

Re-evaluation Note

Tribenuron methyl

(publié aussi en français)

16 June 2009

This document is published by the Health Canada Pest Management Regulatory Agency. For further information, please contact:

Publications
Pest Management Regulatory Agency
Health Canada
2720 Riverside Drive
A.L. 6605C
Ottawa, Ontario
K1A 0K9

Internet: pmra_publications@hc-sc.gc.ca
healthcanada.gc.ca/pmra
Facsimile: 613-736-3758
Information Service:
1-800-267-6315 or 613-736-3799
pmra_infoserv@hc-sc.gc.ca

Canada

HC Pub: 8202

ISBN: 978-1-100-12346-2 (978-1-100-12347-9)

Catalogue number: H113-5/2009-4E (H113-5/2009-4E-PDF)

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In June 2008, Health Canada's Pest Management Regulatory Agency (PMRA) published a notice of initiation for the re-evaluation of tribenuron methyl and its associated use as a herbicide, for postemergent control of broadleaf weeds (in the early bud to prebloom stages) in cereal and pulse crops, lowbush blueberries (in Eastern Canada only) and on pasture and rangeland.

After reviewing the data submitted for the registration of the technical grade active ingredient of tribenuron methyl in the 1990s, the PMRA considers that data and the scientific approaches used to assess this data and to establish relevant toxicity endpoints meet current standards.

Consequently, the PMRA has determined that products containing tribenuron methyl do not present unacceptable risks to human health or the environment, provided end-use product labels are amended to include updated label statements.

1.0 Background

Tribenuron methyl was first registered in 1991 in Canada on a conditional basis, and full registration was granted in 1995. It is a member of the sulfonylurea family of herbicides and is used for postemergent control of a wide range of broadleaf weeds (in the early bud to prebloom stages) on industrial oil seed and fibre crops, terrestrial food/feed crops and for vegetation control on non-food sites.

Tribenuron methyl is applied as a spray once per season by ground and aerial equipment and as a spot treatment using a backpack sprayer (on lowbush blueberries in Eastern Canada only). Tribenuron methyl is applied at a maximum rate of 15 g a.i./ha on cereal and pulse crops, pasture and rangeland; at a rate of 30 g a.i./ha using ground spray equipment for summerfallow; and at a rate of 0.2 g a.i./L water for spot treatment using a backpack applicator on lowbush blueberries (in Eastern Canada only).

With regards to the federal government's Toxic Substances Management Policy (TSMP) criteria, tribenuron methyl is not bioaccumulative or persistent, and the *n*-octanol-water partition coefficient ($\log K_{ow}$) is 0.78, which is below the TSMP Track 1 cut-off criterion of ≥ 5.0 . Tribenuron methyl does not meet all Track 1 criteria; thus, it is not a candidate for Track 1 classification as per the Federal Toxic Substances Management Policy and Regulatory Directive DIR99-03.

2.0 Regulatory Update

The data that was submitted for the registration of the technical grade active ingredient of tribenuron methyl in the 1990s is still considered to meet current data requirements. Scientific approaches used to assess this data and to establish relevant toxicity endpoints are also considered to meet current standards.

Occupational risk and exposure to tribenuron methyl is considered acceptable when wearing the personal protective equipment listed on the end-use product label (i.e. a long-sleeved shirt, long pants, chemical resistant gloves and shoes plus socks). Postapplication exposure is expected to be minimal, and calculated margins of exposure for the relevant scenarios were found to be acceptable. Based on the quantitative risk assessment, low acute toxicity and low irritation potential of tribenuron methyl, the PMRA is requiring the minimum (default) 12-hour re-entry interval for all end-use products containing tribenuron methyl. Chronic dietary exposure and risk from food and water is acceptable at 30.7% of the acceptable daily intake for the most sensitive subpopulation. No acute risks are associated with the use of tribenuron methyl. No residential uses exist for tribenuron methyl; therefore, these aspects do not need to be addressed. Exposure and risk to the environment will be adequately mitigated by adding buffer zones on the label that can mitigate risk to non-target species through spray drift onto terrestrial habitats and aquatic habitats.

Use of tribenuron methyl as an herbicide for postemergent control of annual grass and broadleaf weeds on cereal and pulse crops, for summerfallow, on pasture and rangeland, on lowbush blueberries in Eastern Canada and as a preseeding herbicide on fields to be planted to wheat (spring, winter and durum) and barley only is considered to be associated with acceptable risk. Tribenuron methyl is acceptable for continued registration, provided end-use product labels are amended to include updated label statements (see Appendix I).

3.0 Supporting Documentation

PMRA documents, such as Regulatory Directive DIR2001-03, and DACO tables can be found on our website at www.hc-sc.gc.ca/cps-spc/pest/index-eng.php. PMRA documents are also available through the Pest Management Information Service. Phone: 1-800-267-6315 within Canada or 1-613-736-3799 outside Canada (long distance charges apply); fax: 613-736-3798; e-mail: pmra_infoserv@hc-sc.gc.ca.

The federal TSMP is available through Environment Canada's website at www.ec.gc.ca/toxics.

3.1 List of Studies/Information Submitted by Registrant

PMRA 1262234, 1998, Technical Grade DPX-L5300 (Tribenuron methyl) Manufacturing Description and Formation of Impurities, E.I. Du Pont de Nemours and Company, AMR 5161-98, DACO: 2.11.1, 2.11.2, 2.11.3, 2.11.4.

PMRA 1239683, Technical Grade Tribenuron Methyl (DPX-L5300) Analysis and Certification of Product Ingredients, MRID: N/A, DACO: 3.13.3

3.2 Additional Information Considered

3.2.1 Published Information

PMRA, 1995, Decision Document E95-04, Tribenuron Methyl, December 8, 1995.

Appendix I Label Amendments for Products Containing Tribenuron Methyl

Based on the Canadian use pattern of tribenuron methyl, Canadian commercial end-use product labels should be amended to include the following statements.

For commercial end-use products containing tribenuron methyl, the following must be included in the **PRECAUTION** section of all product labels.

- **DO NOT** enter or allow worker entry into treated areas for 12 hours following application.

For commercial end-use products containing tribenuron methyl, the following must be included in the **ENVIRONMENTAL HAZARDS** section of all product labels.

- **TOXIC** to aquatic organisms and non-target terrestrial plants. Observe buffer zones specified under **DIRECTIONS FOR USE**.

For commercial end-use products containing tribenuron methyl, the following must be included in the **DIRECTIONS FOR USE** section of all product labels.

- Field sprayer application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

Aerial application: **DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) coarse classification. To reduce drift caused by turbulent wingtip vortices, the nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotorspan.

Buffer Zones:

Use of the following spray methods or equipment **DO NOT** require a buffer zone: hand-held or backpack sprayer, spot treatment, inter-row hooded sprayer, soil drench and soil incorporation.

The buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands), sensitive freshwater habitats (lakes, rivers, sloughs, ponds, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:		
			Aquatic Habitat of Depths:		Terrestrial Habitat
			Less than 1 m	Greater than 1 m	
Field sprayer*	Fall application on winter wheat in Ontario only		0	0	2
	Canary seed, pulse crops (including dry beans, fababean, field pea, lupin and soybean), summerfallow, fields to be planted to wheat (spring, winter and durum), barley (only as a pre-seeding herbicide), pasture and rangeland		0	0	3
	Wheat, barley, oats, seedling and established grass species for forage and seed production only		1	0	4
	Lowbush blueberries (Eastern Canada only)		1	0	10
Aerial	Wheat (spring, winter, durum), spring barley, oats, seedling and established grass species for forage and seed production only, winter wheat (fall application in Eastern Canada)	Fixed and rotary wing	0	0	40

* For field sprayer application, buffer zones can be reduced with the use of drift-reducing spray shields. When using a spray boom fitted with a full shield (shroud, curtain) that extends to the crop canopy, the labelled buffer zone can be reduced by 70%. When using a spray boom where individual nozzles are fitted with cone-shaped shields that are no more than 30 cm above the crop canopy, the labelled buffer zone can be reduced by 30%.

When a tank mixture is used, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture.

Method of Application	Crop		Buffer Zones (metres) Required for the Protection of:		
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	Wheat, barley, oats, seedling and established grass species for forage and seed production only		1	0	4
	Lowbush blueberries (Eastern Canada only)		1	0	10
Aerial	Wheat (spring, winter, durum), spring barley, oats, seedling and established grass species for forage and seed production only, winter wheat (fall application in Eastern Canada)	Fixed and rotary wing	0	0	40

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